


A. CTTATCGATACCGTCGAAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCAT
CACAAATTTACAAATAAAGCATTTTTTCTACTGCATTCTAGTTGTGGTTTGTCCAAACTCATCA
++++++
ATGTATCTTATCATGTC
↑
Cleavage site

B. 

+ Upstream and downstream
cleavage-polyadenylation elements

Fig 2 E1A transcription control region

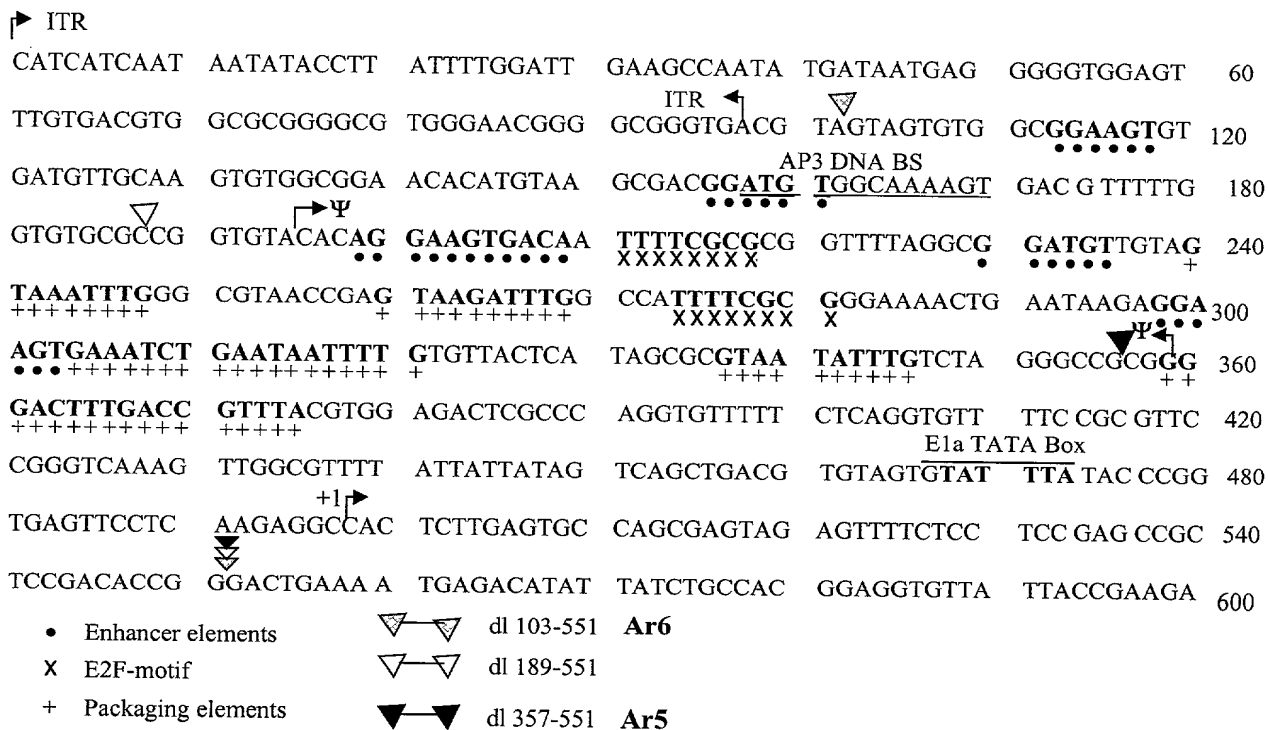


Figure 3. Sequence of Ar6pAE2fF from left and right ends of viral DNA

A. Nucleotides 1-1802 containing ITR, polyA, E2F-1 promoter, E1a and a portion of the E1b gene

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1  CATCATCAATAATATACCTTATTTTGGATTGAAGCCAATATGATAATGAGGGGGTGGAGT
   +-----ITR-----
61  TTGTGACGTGGCGCGGGCGTGGGAACGGGGCGGGTGACGTAGGGCGCGATCAAGCTTAT
   +-----ITR-----+
121 CGATACCGTCGAAACTTGTTTATATGCAGCTTATAATGGTTACAAATAAAGCAATAGCATC
    -----polyA-----
181 ACAAATTTACAAATAAAGCATTTTTTTCACTGCATTCTAGTTGTGGTTTGTCCAAACTC
    -----polyA-----
241 ATCAATGTATCTTATCATGTCTGGATCCGCGCCGCTAGCGATCATCCGACAAAGCCTGC
    -----+-----+
301 GCGCGCCCCGCCCCGCCATTGGCCGTACCGCCCCGCGCCGCGCCGCCCATCTCGCCCCCTCG
    -----E2F-1 promoter-----
361 CCGCCGGGTCCGGCGCGTTAAAGCCAATAGGAACCGCCGCGTGTTCCTCCGTCACGGCCG
    -----E2F-1 promoter-----
421 GGGCAGCCAATTGTGGCGGCGCTCGGCGGCTCGTGGCTCTTTCGCGGCAAAAAGGATTTG
    -----E2f-1 promoter-----
481 GCGCGTAAAAGTGGCCGGGACTTTGCAGGCAGCGGCGGCGGGGGCGGAGCGGGATCGAG
    -----E2f-1 promoter-----
541 CCCTCGATGATATCAGATCATCGGATCCCGGTCTGACTGAAAATGAGACATATTATCTGCC
    -----+-----+
601 ACGGAGGTGTTATTACCGAAGAAATGGCCGCCAGTCTTTTGGACCAGCTGATCGAAGAGG
    -----E1a gene-----
661 TACTGGCTGATAATCTTCCACCTCCTAGCCATTTTGAACCACCTACCTTTCACGAACTGT
    -----E1a gene-----
721 ATGATTTAGACGTGACGGCCCCCGAAGATCCCAACGAGGAGGCGGTTTCGCAGATTTTTC
    -----E1a gene-----
781 CCGACTCTGTAATGTTGGCGGTGCAGGAAGGGATTGACTTACTCACTTTTCCGCCGGCGC
    -----E1a gene-----
841 CCGGTTCTCCGGAGCCGCTCACCTTTCCCGGCAGCCCGAGCAGCCGGAGCAGAGAGCCT
    -----E1a gene-----
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901 TGGGTCCGGTTTCTATGCCAAACCTTGTACCGGAGGTGATCGATCTTACCTGCCACGAGG
-----E1a gene-----
961 CTGGCTTTCCACCCAGTGACGACGAGGATGAAGAGGGTGAGGAGTTTGTGTTAGATTATG
-----E1a gene-----
1021 TGGAGCACCCCGGGCACGGTTGCAGGTCTTGTCAATTATCACCGGAGGAATACGGGGGACC
-----E1a gene-----
1081 CAGATAATTATGTGTTTCGCTTTGCTATATGAGGACCTGTGGCATGTTTGTCTACAGTAAGT
-----E1a gene-----
1141 GAAAATTATGGGCAGTGGGTGATAGAGTGGTGGGTTTGGTGTGGTAATTTTTTTTTTAAT
-----E1a gene-----
1201 TTTTACAGTTTTGTGGTTTAAAGAATTTTGTATTGTGATTTTTTTTAAAAGGTCTGTGTC
-----E1a gene-----
1261 TGAACCTGAGCCTGAGCCCGAGCCAGAACCGGAGCCTGCAAGACCTACCCGCCGTCTCTAA
-----E1a gene-----
1321 AATGGCGCCTGCTATCCTGAGACGCCCCGACATCACCTGTGTCTAGAGAATGCAATAGTAG
-----E1a gene-----
1381 TACGGATAGCTGTGACTCCGGTCCTTCTAACACACCTCCTGAGATACACCCGGTGGTCCC
-----E1a gene-----
1441 GCTGTGCCCCATTAAACCAGTTGCCGTGAGAGTTGGTGGGCGTCGCCAGGCTGTGGAATG
-----E1a gene-----
1501 TATCGAGGACTTGCTTAACGAGCCTGGGCAACCTTTGGACTTGAGCTGTAAACGCCCCAG
-----E1a gene-----
1561 GCCATAAGGTGTAAACCTGTGATTGCGTGTGTGGTTAACGCCTTTGTTTGCTGAATGAGT
-----E1a gene-----
1621 TGATGTAAGTTTAAATAAAGGGTGAGATAATGTTTAACTTGCATGGCGTGTTAAATGGGGC
-----+-----
1681 GGGGCTTAAAGGGTATATAATGCGCCGTGGGCTAATCTTGGTTACATCTGACCTCATGGA
-----E1b gene-----
1741 GGCTTGGGAGTGTTTGAAGATTTTTCTGCTGTGCGTAACTTGCTGGAACAGAGCTCTAA
-----E1b gene-----
1801 CA
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B. Nucleotides 33881-34412 containing packaging signal and ITR

33881 AACCTACGCCAGAAACGAAAGCCAAAAACCCACAACCTTCCTCAAATCGTCACTTCCGT
33941 TTTCCACGTTACGTCACTTCCCATTTTAATTAAGAATTCTACAATTCCCAACACATACA
34001 AGTTACTCCGCCCTAAAACCCCTGGGCGAGTCTCCACGTAAACGGTCAAAGTCCCCGCGGC
+--packaging signal-----
34061 CCTAGACAAATATTACGCGCTATGAGTAACACAAAATTATTTCAGATTTCACTTCCTCTTA
-----packaging signal-----
34121 TTCAGTTTTCCCGCGAAAATGGCCAAATCTTACTCGGTTACGCCCAAATTTACTACAACA
-----packaging signal-----
34181 TCCGCCTAAAACCGCGCGAAAATTGTCACTTCCTGTGTACACCGGCGCACACCAAAAACG
-----+
34241 TCACTTTTGCCACATCCGTCGCTTACATGTGTTCCGCCACACTTGCAACATCACACTTCC
34301 GCCACACTACTACGTCACCCGCCCCGTTCCCACGCCCCGCGCCACGTCACAACTCCACC
+-----ITR-----
34361 CCCTCATTATCATATTGGCTTCAATCCAAAATAAGGTATATTATTGATGATG
-----ITR-----+

Figure 4. Sequence of Ar6F from left end of viral DNA

1 CATCATCAATAATATACCTTATTTTGGATTGAAGCCAATATGATAATGAGGGGGTGGAGT
+-----ITR-----
61 TTGTGACGTGGCGCGGGGCGTGGGAACGGGGCGGGTGACGTAGGGCGCGCCGCTAGCGAT
-----ITR-----++-----MCS-----
121 ATCGGATCCCGGTCTGACTGAAAATGAGACATATTATCTGCCACGGAGGTGTTATTACCGA
-----+-----E1a-----
181 AGAAATGGCCGCCAGTCTTTTGGACCAGCTGATCGAAGAGGTACTGGCTGATAATCTTCC
-----E1a-----
241 ACCTCCTAGCCATTTTGAACCACCTACCCTTCACGAACTGTATGATTAGACGTGACGGC
-----E1a-----
301 CCCC GAAGATCCCAACGAGGAGGCGGTTTCGCAGATTTTTCCTGACTCTGTAATGTTGGC
-----E1a-----
361 GGTGCAGGAAGGGATTGACTTACTCACTTTTCCGCCGGCGCCCGGTTCTCCGGAGCCGCC
-----E1a-----
421 TCACCTTTCCCGGCAGCCCGAGCAGCCGGAGCAGAGAGCCTTGGGTCCGGTTTCTATGCC
-----E1a-----
481 AAACCTTGTACCGGAGGTGATCGATCTTACCTGCCACGAGGCTGGCTTTCCACCCAGTGA
-----E1a-----
541 CGACGAGGATGAAGAGGGTGAGGAGTTTGTGTTAGATTATGTGGAGCACCCCGGGCACGG
-----E1a-----
601 TTGCAGGTCTTGTTCATTATCACCGGAGGAATACGGGGGACCCAGATATTATGTGTTTCGCT
-----E1a-----

Figure 5. Sequence of Ar6pAF from left end of viral DNA

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1  CATCATCAATAATATACCTTATTTTGGATTGAAGCCAATATGATAATGAGGGGGTGGAGT
   +-----ITR-----
61  TTGTGACGTGGCGCGGGGCGTGGGAACGGGGCGGGTGACGTAGGGCGCGATCAAGCTTAT
   -----ITR-----+
121 CGATACCGTCGAAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCATC
   -----polyA-----
181 ACAAATTTACAAATAAAGCATTTTTTTCTACTGCATTCTAGTTGTGGTTTGTCCAAACTC
   -----polyA-----
241 ATCAATGTATCTTATCATGTCTGGATCCGCGCCGCTAGCGATATCGGATCCCGGTCGACT
   -----+
301 GAAAATGAGACATATTATCTGCCACGGAGGTGTTATTACCGAAGAAATGGCCGCCAGTCT
   -----E1a-----
361 TTTGGACCAGCTGATCGAAGAGGTACTGGCTGATAATCTTCCACCTCCTAGCCATTTTGA
   -----E1a-----
421 ACCACCTACCCTTCACGAACTGTATGATTTAGACGTGACGGCCCCCGAAGATCCCAACGA
   -----E1a-----
481 GGAGGCGGTTTTCGCAGATTTTCCCGACTCTGTAATGTTGGCGGTGCAGGAAGGGATTGA
   -----E1a-----
541 CTTACTCACTTTTCCGCCGGCGCCCGGTTCTCCGGAGCCGCCTCACCTTTCCCGGCAGCC
   -----E1a-----
601 CGAGCAGCCGGAGCAGAGAGCCTTGGGTCCGGTTTCTATGCCAAACCTTGTACCGGAGGT
   -----E1a-----
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Figure 6. Schematic diagram of Ar6pAF and Ar6pAE2fF vectors

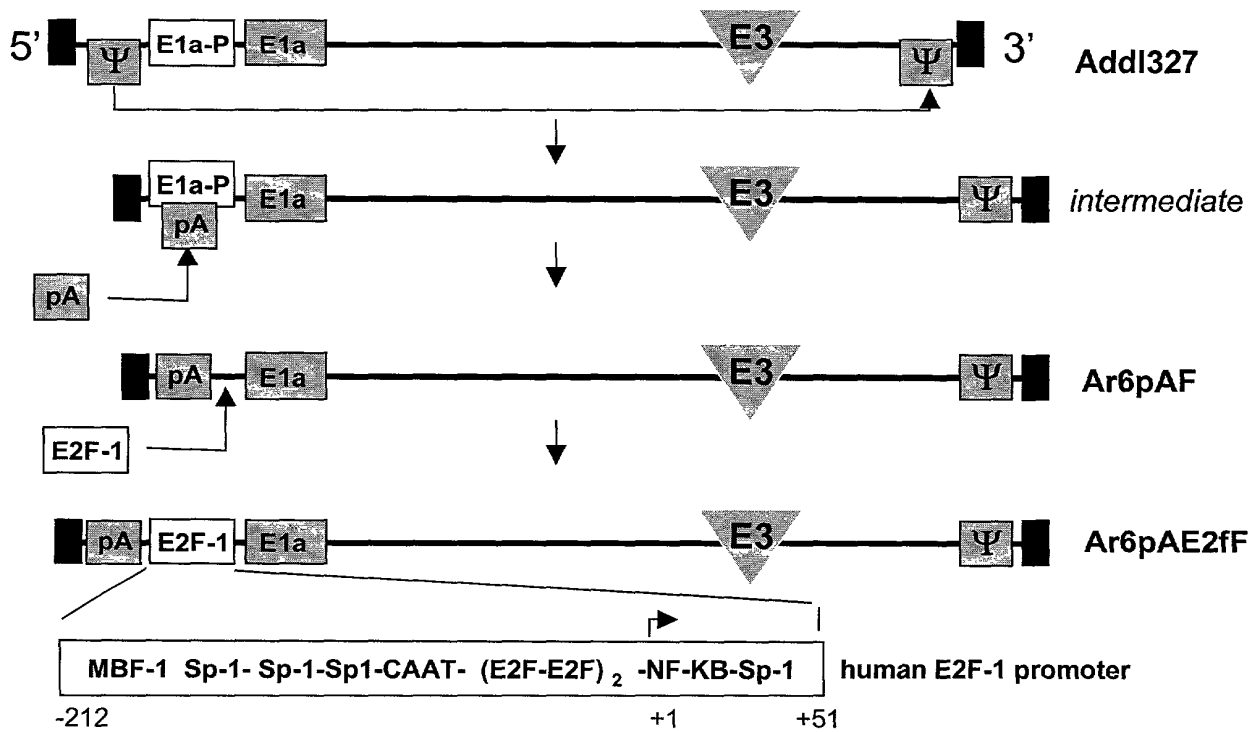


Fig. 7 Body weight change

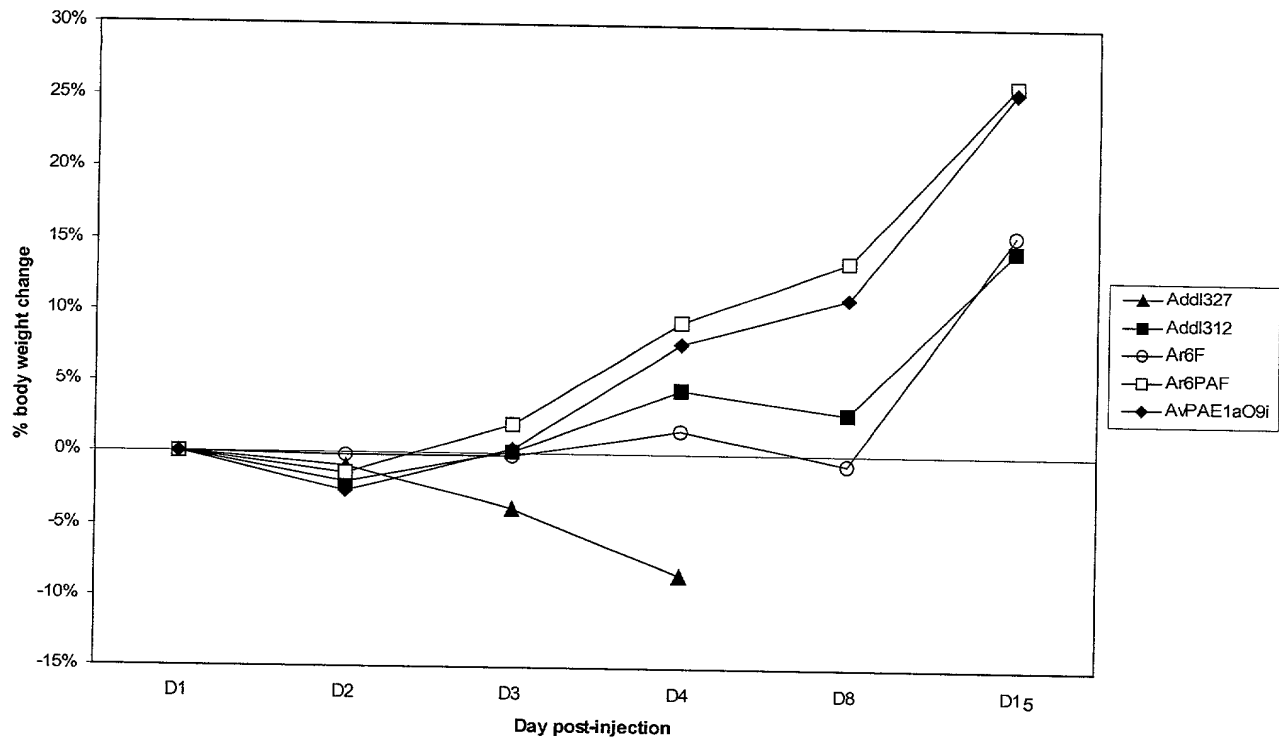


Fig. 8 Minimizing nonspecific transactivation of E1a gene

Backbones generated:

